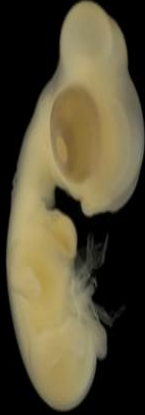


# Ready for a Challenge?

Winner Gets 2 bonus Points on Exam!!!!

# Guess who?



A



B



C



D

Choices: Pig Human Chicken Dolphin

# How did you decide?

What are some of the similarities you noticed?

What are some of the differences?

Can you guess what this has to do with evolution?



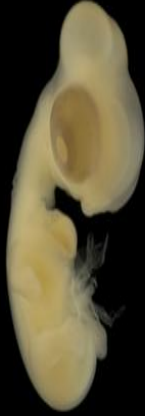
# Today's Goals.....

## Exploring Forms of Evidence for Evolution....

- Embryology Challenge!
- Way cool Adaptations!
- What's up with Fossils?
- Is my arm really a wing?
- Proof is in the amino acid...

# EVIDENCE FOR EVOLUTION

# Who are our future Embryologists?



Chicken



Dolphin



Human



Pig

# 1. Embryology & Evolution

- At early development, many organisms look very similar
- Certain Structures look identical as an embryo but become specialized structures as an adult (*Pharyngeal gill slits*)
- This suggests....Species evolved from a common, distant ancestor

## 2. Presence of Adaptations

- Any variation that increases an organism's chance of survival
- Two Common examples:
  - Mimicry
  - Camouflage



# Who is more harmful?



Figure 1



Figure 2

# Who is more harmful?



Viceroy



Monarch

Example of Mimicry



# Who would you rather get bit by?



Figure 1



Figure 2

# Personally, neither but.....



Arizona Mountain King Snake



Western Coral snake

Another classic example of Mimicry



# Where am I?



© WildMadagascar.org

# Here I am....



Example of a camouflage adaptation



# How about now?



# Here I am...



An example of camouflage  
*Gecko on a Nosey Mangabe Tree*



**Video time.....**

# 4. The Fossil Records

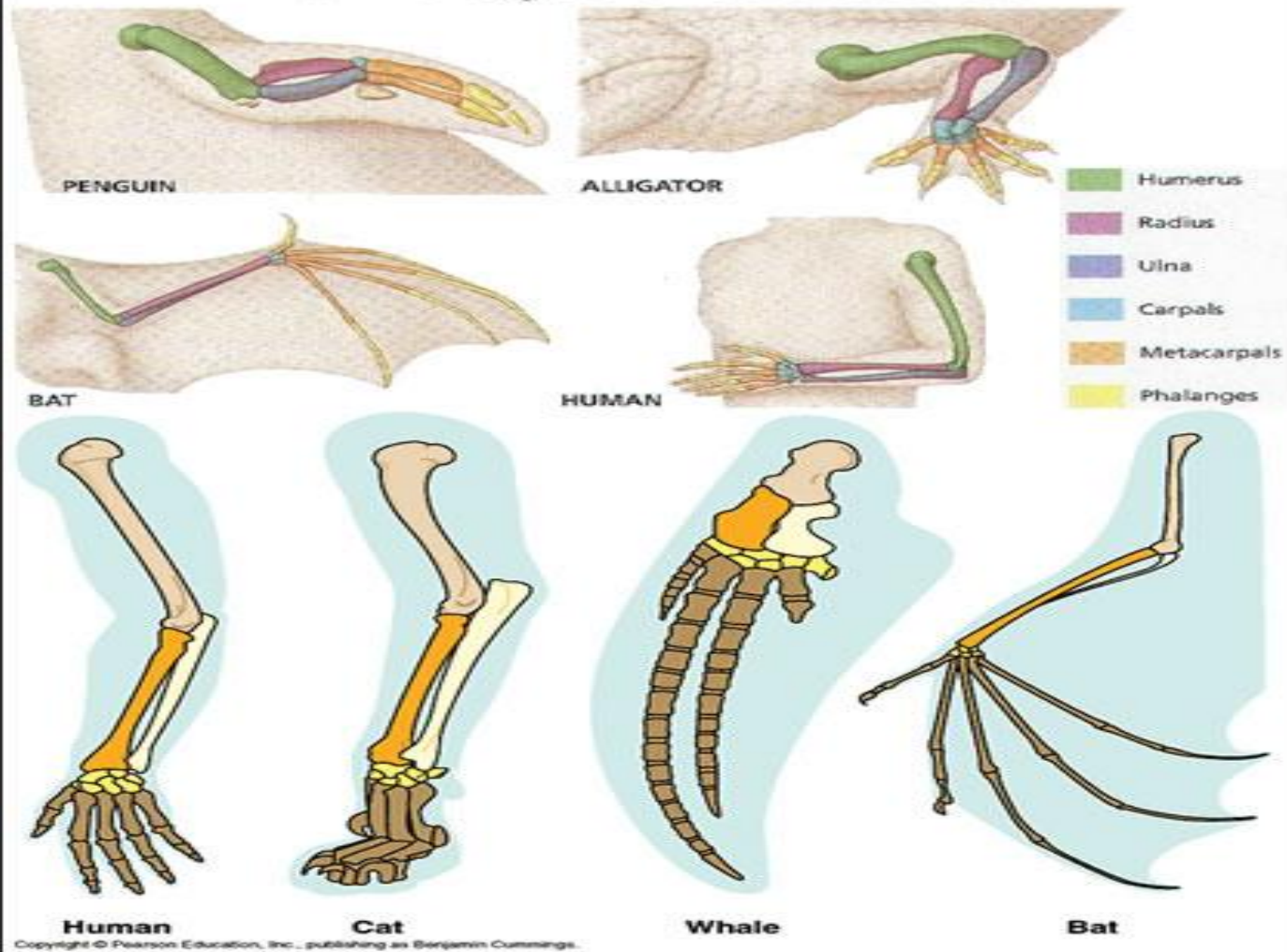
- Fossils provide snapshots of the past
- Fossils show transitional structures that link present day organisms to early ancestors
- Ultimately shows how new species are derived from older forms

# Do we share a common ancestor?



4.

# Homologous Structures



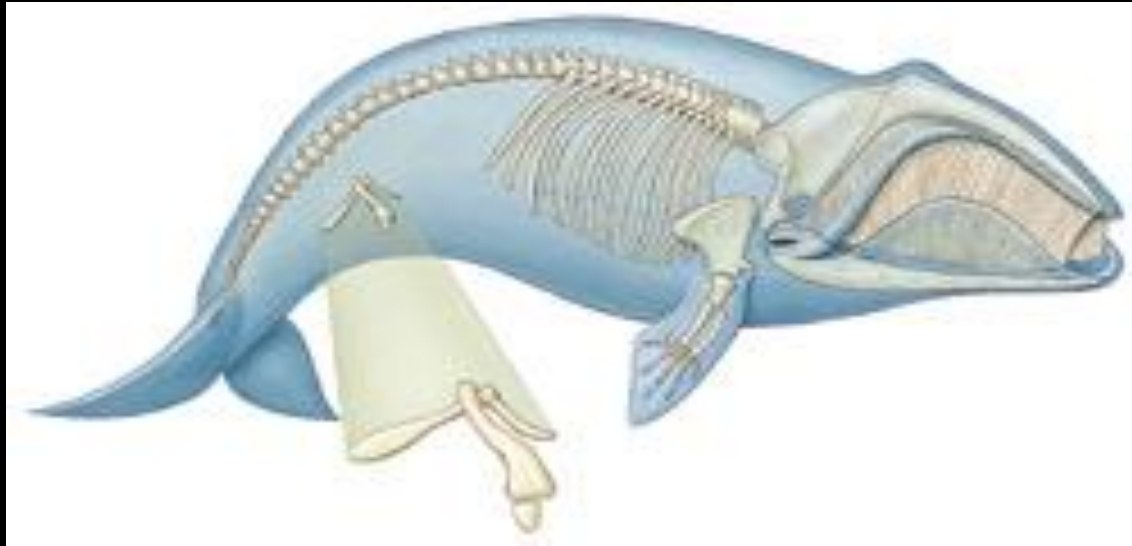
**Homologous Structures:** Structures that have a similar evolutionary origin & structure by are adapted for different purposes.

# Don't get confused with Analogous structures



**Analogous structures:** Structures with similar function but different evolutionary origins

# What can a Whale's tailbone tell us?



**Vestigial Structures:** Structures in organisms that have no apparent use but did at one point in time for their presumed ancestors had

# STOP!!!!

Name 4 Pieces of Evidence  
that we have learned about  
so far.....

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# 4 Types of evidence

1. Embryology
2. Existence of Adaptations
3. Fossil Record
4. Homologous Structures



# 5. Proof in Biochemistry

- Most Reliable source of evidence for evolution
- Similar DNA, RNA & biochemicals are shared among organisms
- More shared biochemicals = More closely related organisms are
- More shared biochemicals = More recently shared common ancestor

# Let's do some Investigating?

Amino Acid Lab Activity